

research has produced two new firing pin designs. To solve the primer blanking problem tip diameter was reduced to .049 on one design and .055 on the other, the firing pin spring was redesigned to absorb 50% less energy (and thus increase firing pin inertia) and the exit hole on breech bolts was radiused by a metal removal technique instead of a punch. Tip strength was increased by shortening the tip to approximately half of its former length in order to reduce the cantilever effect.

Testing is now under way on these designs. Both have so far sustained 130 proof rounds each with no blanking or breakage. The proof ammunition being used is the highest pressure of all lots available (77 C.U.P.). Standard 742s proofed in the Plant gallery with this ammunition show a 5% blanking rate (5 of 100 guns monitored). ~~(A) Endurance testing on two additional guns is under way and no problems have been observed so far.~~ Indent on closing was 0.00 (no discernable mark under 40x magnification) and indent level on firing was increased approximately .004 which now puts us within Remington specs.

After conclusion of endurance testing we will reach a decision as to which tip design to use, .049 or .055. The .055 tip has an advantage in that it should be slightly stronger but the .049 tip gives more leeway for out of tolerance parts.

Parts for additional testing including firing pins, springs, and breech bolts are now being fabricated.

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- (A) Endurance testing on two additional guns is also complete. One pin went 4489 rounds and the other 3498 rounds. No tips or bodies were broken. The failure was at the "hat" section at the rear of the pin. This is considered to be an excellent failure mode since it does not present a safety problem upon failure. Indent on closing was checked after failure and was 0.0 on both guns.